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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,773	01/14/2004	Alan G. Bishop	MS1-1807US	8136
22801	7590	08/18/2006	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			JANAKIRAMAN, NITHYA	
			ART UNIT	PAPER NUMBER
			2191	

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759.773

Applicant(s)

BISHOP ET AL.

Examiner

Nithya Janakiraman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-36 are presented for examination. This office action is in response to the application filed on January 14, 2004.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 1-5 are rejected by 35 U.S.C. 101 as they are directed towards non-statutory subject matter.
2. Regarding independent claim 1, a method emulating an operation, and permitting access to memory are not sufficient to be statutory subject matter. There is no useful, tangible, or concrete result. All depending claims are rejected as well.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4-28, 31-34, and 36 are rejected under 35 U.S.C. 102(b) as being unpatentable over US Patent 5,073,968, Morrison (hereinafter Morrison).

5. Regarding claim 1, Morrison teaches:

A method comprising:

emulating an operation of a client (see figure 3); and
permitting the emulated operation to access a contiguous portion of emulated memory only when a pointer used by the emulated operation and a table entry used to manage the emulated memory both contain the same identifier, wherein an address to the contiguous portion is contained in both the pointer and the table entry (see figure 6, “check for legal address ranges”; column 2, lines 35-41; column 6, lines 38-40).

6. Regarding claim 2, Morrison teaches:

The method as defined in Claim 1, wherein:

the table entry is in a table that contains a plurality of said table entries (see figure 4, “address selection”);

each said table entry references an address of one said contiguous portion of the emulated memory (see figure 4, “address selection”);

the pointer is one of a plurality of said pointers (see column 6, lines 27-49); and

each said pointer contains the address of a respective said contiguous portion of the emulated memory (see column 6, lines 27-49); and

one said identifier corresponding to the respective said contiguous portion of the emulated memory (see figure 4).

7. Regarding claim 4, Morrison teaches:

The method as defined in Claim 1, wherein the client is *selected from the group consisting of* (emphasis added):

a personal computer (PC);

a workstation;

a Server;

a set top box;

a video game console;

a Personal Digital Assistant (PDA);

a cellular telephone;

a handheld computing device; and

a computing device having less memory and/or computing resources than that of another computing device executing an application that emulates the operation of the client (the Morrison device necessarily would require a computing device that had less memory than the device that was emulating it, in order to accomplish emulation).

8. Regarding claim 5, Morrison teaches:

A computer-readable medium comprising instructions that, when executed by a computer, performs the method of Claim 1 (a computer-readable medium would necessarily be needed in order to perform the functions of the Morrison device).

9. Regarding claim 6, Morrison teaches:

A method comprising:

making a call to a memory manager for an emulated memory access operation to an allocated contiguous portion of emulated memory, wherein a generation count has been assigned to:

a plurality of table entries corresponding to a respective plurality of said allocated contiguous portions of emulated memory, and

a plurality of pointers each containing an address to a respective said allocated contiguous portion of emulated memory (see columns 3 and 4);

comparing the generation count:

in the pointer containing the address to the allocated contiguous portion of emulated memory (see column 5, lines 54-62; column 6, lines 27-40); and

in the table entry corresponding to the allocated contiguous portion of emulated memory (see column 5, lines 54-62; column 6, lines 27-40);

if the respective said generation counts in the comparison do not match, then

outputting a diagnostic (see figure 7; returning an error would necessarily require performing a diagnostic).

10. Regarding claim 7, Morrison teaches:

The method as defined in Claim 6, further comprising:

performing the emulated memory access operation for which the memory manager was called when there is a match of the respective said generation counts (see column 6, lines 27-40); and

preventing the performance of the emulated memory access operation for which the memory manager was called when the respective said generation counts of the comparison do not match (see column 5, lines 54-62).

11. Regarding claim 8, Morrison teaches:

The method as defined in Claim 7, further comprising, when there is a match and the emulated memory access operation is not a read or a write operation, incrementing the generation count in both:

the pointer containing the address to the allocated contiguous portion of emulated memory (see column 6, lines 27-40); and

the table entry corresponding to the allocated contiguous portion of emulated memory (see figure 6).

12. Regarding claim 9, Morrison teaches:

The method as defined in Claim 6, further comprising, when the comparison finds that there is a match of the respective said generation counts:

removing the generation count from the pointer specified by the memory manager for the emulated memory access operation during the performing of the emulated memory access operation for which the memory manager was called (see claims 5).

13. Regarding claim 10, Morrison teaches:

The method as defined in Claim 6, wherein the emulated memory access operation *is selected from the group consisting of* (emphasis added):

a read operation;

a write operation;

a reallocation operation; and

an operation to free one or more of said allocated contiguous portions of emulated memory (see column 1).

14. Regarding claim 11, Morrison teaches:

The method as defined in Claim 6, further comprising, prior to the making of the call:

making a call to the memory manager for to allocate a contiguous portion of emulated memory (see column 4, lines 7-17);

receiving one said pointer from the memory manager that contains the address of the allocated contiguous portion of emulated memory (see column 6, lines 27-49);

performing the allocation of the contiguous portion of emulated memory; and inserting the generation count (see column 3, lines 17-26):

in the:

the pointer containing the address to the one said allocated contiguous portion of emulated memory (see column 5, lines 54-62); and

the plurality of table entries corresponding to the one said allocated contiguous portion of emulated memory (see column 6, lines 27-40).

15. Regarding claim 12, see rejection of claim 4.

16. Regarding claim 13, see rejection of claim 5.

17. Regarding claim 14, see rejection of claim 6.

18. Regarding claim 15, see rejection of claim 7.

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19. Regarding claim 16, see rejection of claim 8.
20. Regarding claim 17, see rejection of claim 9.
21. Regarding claim 18, see rejection of claim 10.
22. Regarding claim 19, see rejection of claim 11.
23. Regarding claim 20, see rejection of claim 4.
24. Regarding claim 21, see rejection of claim 5.
25. Regarding claim 22, see rejection of claims 6.
26. Regarding claim 23, see rejection of claim 10.
27. Regarding claim 24, see rejection of claim 3.
28. Regarding claim 25, see rejection of claim 4.
29. Regarding claim 26, see rejection of claim 2.
30. Regarding claim 27, see rejection of claim 2.
31. Regarding claim 28, see rejection of claim 3.
32. Regarding claim 31, see rejection of claim 4.
33. Regarding claim 32, see rejection of claim 6.
34. Regarding claim 33, see rejection of claim 2.
35. Regarding claim 34, see rejection of claim 3.
36. Regarding claim 36, see rejection of claim 4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

37. Claims 3, 29, 30, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison, and further in view of US Patent 6,510,083, See et al (hereinafter See).

Morrison teaches permitting the performance of an operation on a memory, but does not disclose removal of an identifier (claims 3 and 29), the use of table entries with a software program (claim 30), or means for inserting and copying a generation count (claim 35). See teaches these elements (Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the Morrison device with the See device, motivated by the desire to more easily signal the occurrence of the incorrect memory access to memory, thereby increasing the probability of having an easily reproducible test case.

38. Regarding claim 3, See teaches:

The method as defined in Claim 1, wherein the permitted access further comprises: removing the identifier from the corresponding pointer to the contiguous portion of emulated memory (see Abstract); and

when the permitted access is not a read or a write operation, identically changing the identifier in both of the corresponding pointer to contiguous portion of emulated memory and the corresponding table entry (see Abstract).

39. Regarding claim 29, See teaches:

The first software program as defined in Claim 27, wherein the instructions further comprise removing the identifier from each said pointer prior to its use by the second software program (see Abstract).

40. Regarding claim 30, See teaches

The first software program as defined in Claim 27, wherein the instructions further comprise use of the table entries and identifiers with the first software program but not by the second software program (see column 3).

41. Regarding claim 35, Morrison and See teach:

The computer-readable medium as defined in Claim 34, further comprising:
means, prior to an allocation of the previously allocated contiguous portion of emulated memory, for making a call to a memory manager for an allocation of the previously allocated contiguous portion of emulated memory (see rejection of claim 6);
means for receiving the pointer from the memory manager that contains the address to the previously allocated contiguous portion of emulated memory (see rejection of claim 11);
means for performing the allocation of the previously allocated contiguous portion of emulated memory (see rejection of claim 11);

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means for inserting the generation count in the table entry(see See, Abstract); and

means for copying the generation count from the table entry to the pointer (see See, column 3).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nithya Janakiraman whose telephone number is 571-270-1003. The examiner can normally be reached on Monday-Thursday, 8:00am-5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bruce can be reached on 571-272-2487. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



NJ

DAVID BRUCE
SUPERVISORY PATENT EXAMINER